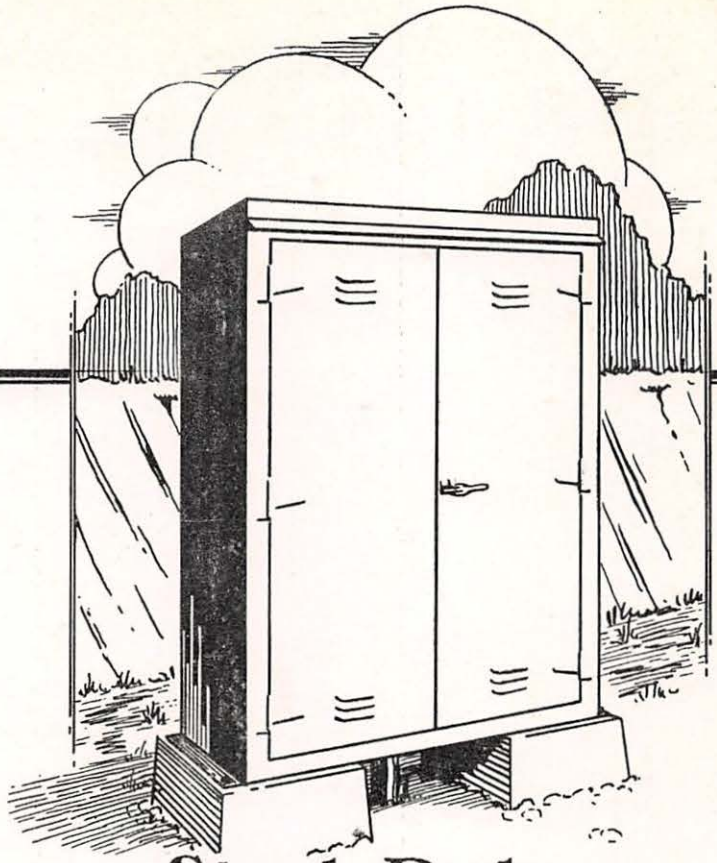

Steel Relay and Instrument Cases

S·I·S·
No. 172

Union Switch & Signal Co.
Swissvale, Pa.

Rotoprinted
IN U.S.A.

Union Switch & Signal Co.

SWISSVALE, PA.

Subject	Steel Relay and Instrument Cases	Sales Information Sheet	
		Number	172
		Date	Oct. 10, 1930
		7 Sheets	

Large size steel relay and instrument cases of the types shown in Figs. 1 to 5 have recently been placed in production, primarily to take the places of those having similar capacities, but constructed of wood and covered with tin. Modern machinery, improved methods, and new materials have made it possible to fabricate sheet metal cases which in the long run are more economical and provide much better protection for relays and other associated signal devices than commonly used wooden cases.

Structural Details:

The new Union cases are made of #14 gauge "Copper Bearing" Rust Resisting Sheet Steel. The construction employs relatively few individual pieces since it has been possible through the use of improved machines to bend and reenforce large sections of material, and thus not only reduce the seam and spot welding requirements but provide for rigidity of the finished product. With the exception of the door fastening devices there are no bolts, rivets, or screws used which will rust or corrode. The base is made up of a frame work of angle iron, welded into one solid unit so that there is little or no stress placed upon the sheet metal case when bolted

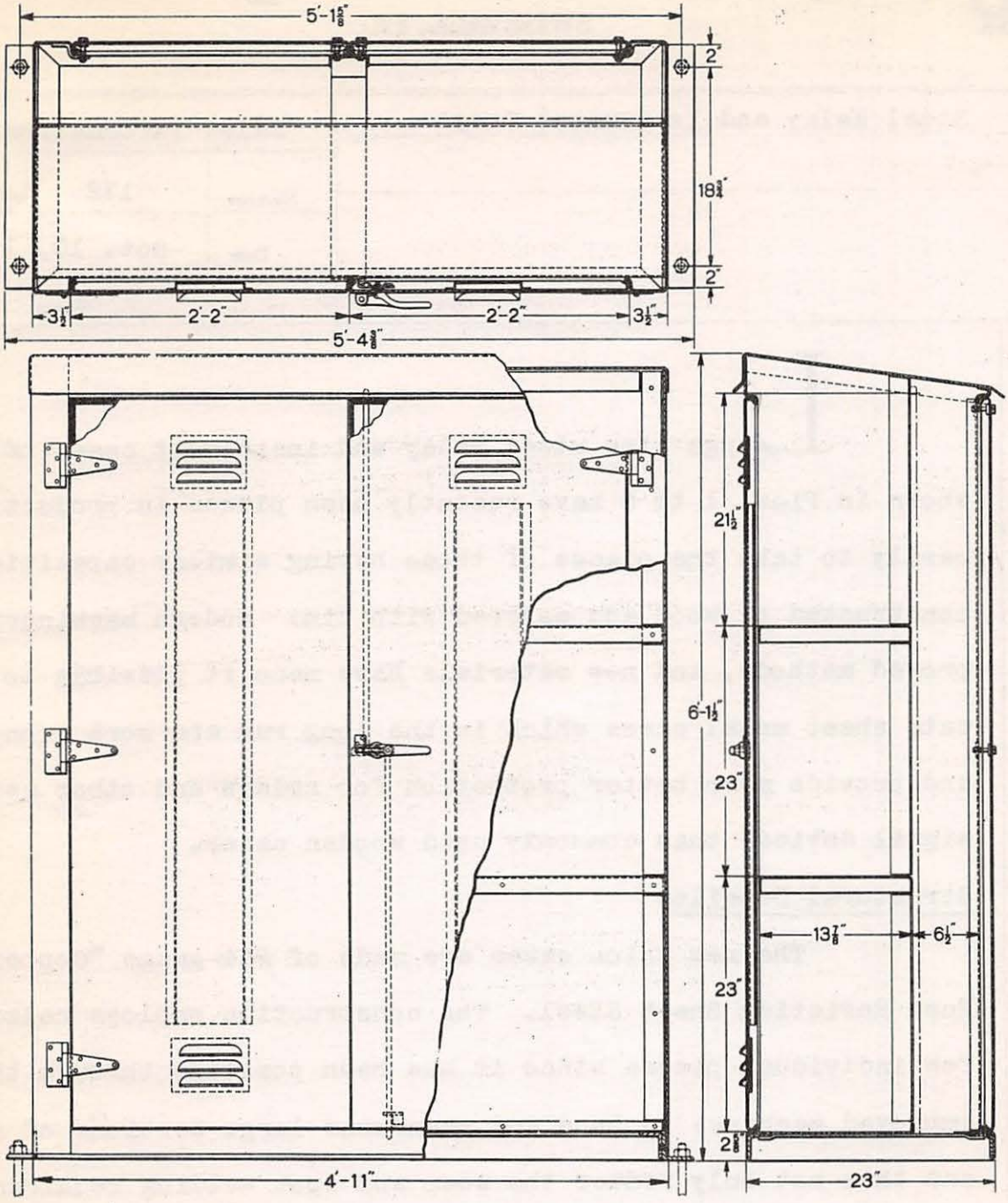

Fig. 1.....4 ft. 11 in. Steel Relay and Instrument Case

to its foundation. Holes are provided in the angle iron base extension for 3/4 in. "holding-down" bolts.

There are three sizes of this type of case available, one (Fig. 1) having an over-all length of 4 ft. 11 in. excluding "hold-

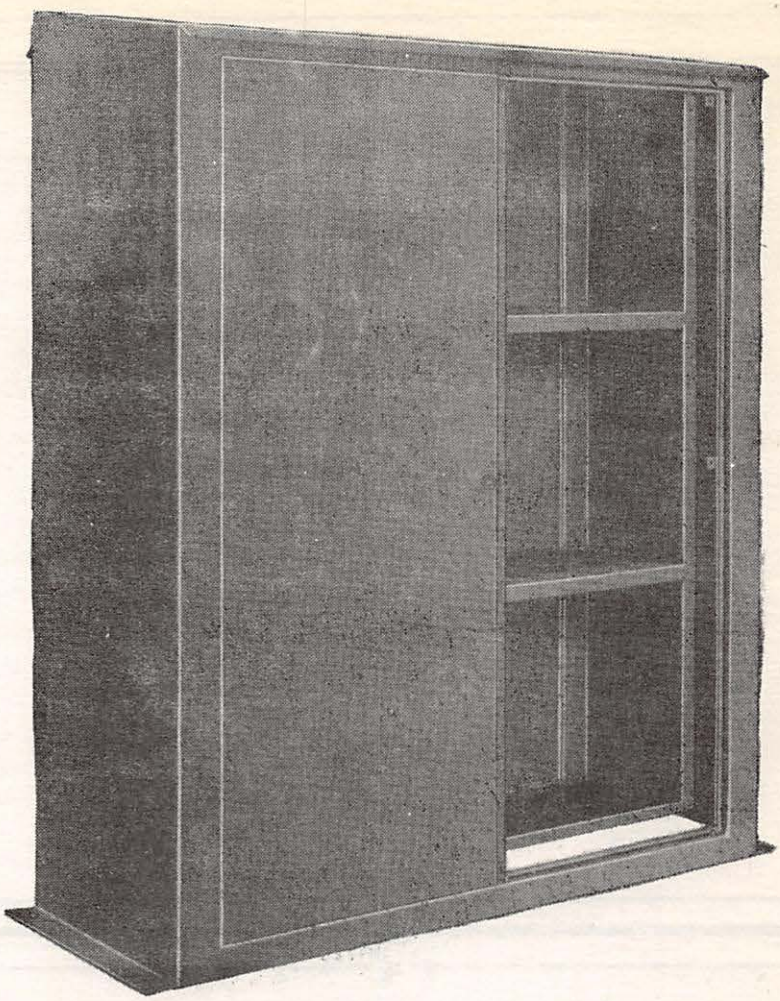

Fig. 2.....Rear View of 4 ft. 11 in.
Steel Relay and Instrument Case.

down" angle iron, another (Fig. 3) 6 ft. 9 in., and another (Fig.4) 9 ft. 8 in. The heighth and depth of the three types are all 6 ft. 1-1/2 in. and 23 in. respectively, and the three shelves are spaced 23 in. apart. The smaller type has an unrestricted shelf mounting surface which measures 13-7/8 in. by 4 ft. 10-3/4 in., while that of the intermediate size measures 13-7/8 in. by 6 ft. 8-3/4 in. and the size of each shelf in the large case is 13-7/8 in. by 9 ft. 7-3/4 in. There is a space of 6-1/2 in. for running wires behind the shelves.

One railroad using this type of case completely partitions

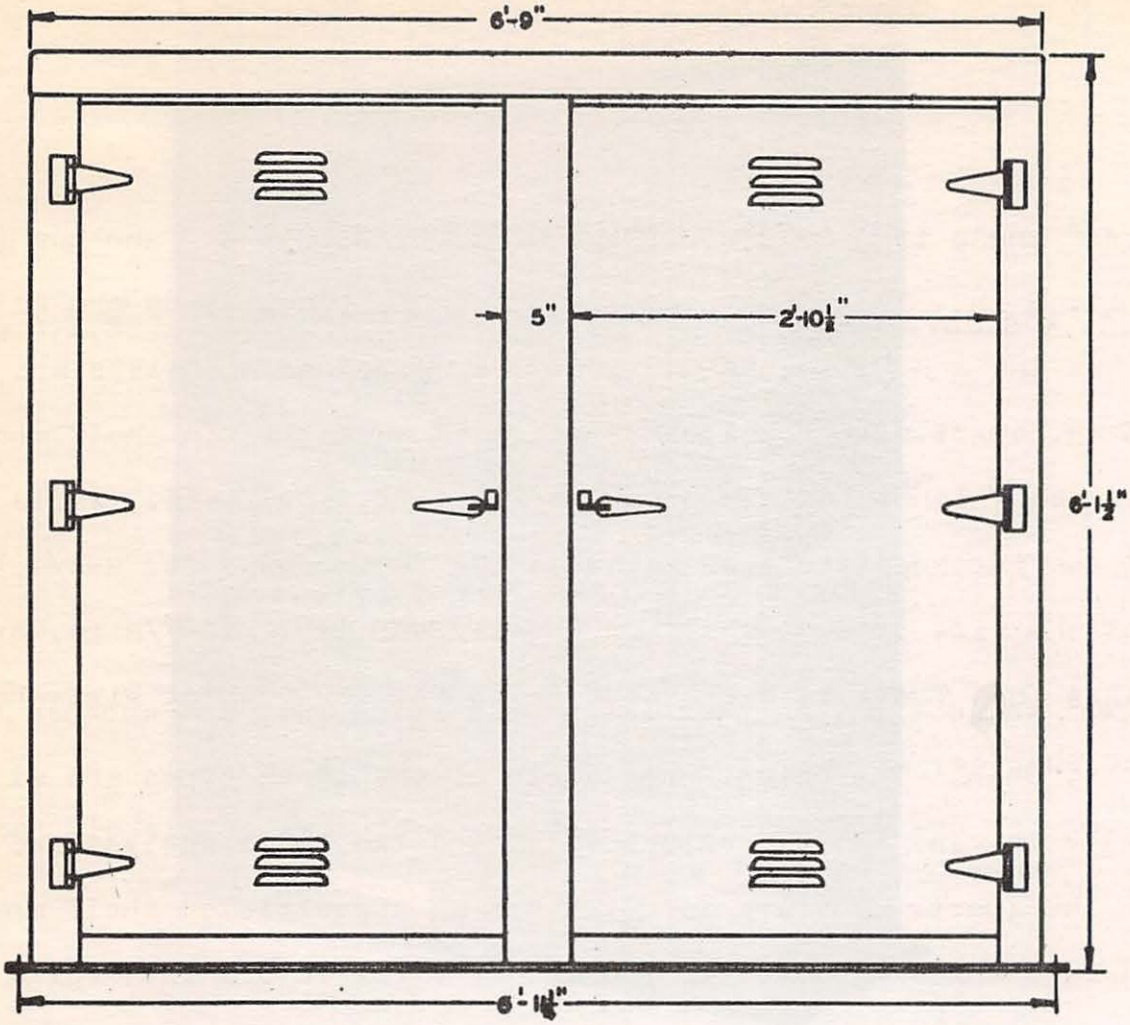

Fig. 3.....6 ft. 9 in. Steel Relay and Instrument Case.

the relay and wiring compartments with 1/2" asbestos board upon which standard A.R.A. terminal blocks are mounted. This seals the relay compartment from the rear wire compartment, and holes are drilled in the board for the wires which go to the terminal posts. Multiple Unit Terminal Blocks, described in Sales Information Sheet #167 provide a very flexible means of terminating wires, and can be conveniently applied to this type of relay case. It is also possible to back up the relay compartments with panels or strips which will allow of terminal posts, relays, transformers, etc. being wall mounted, in fact the complete case may be lined with insulating material.

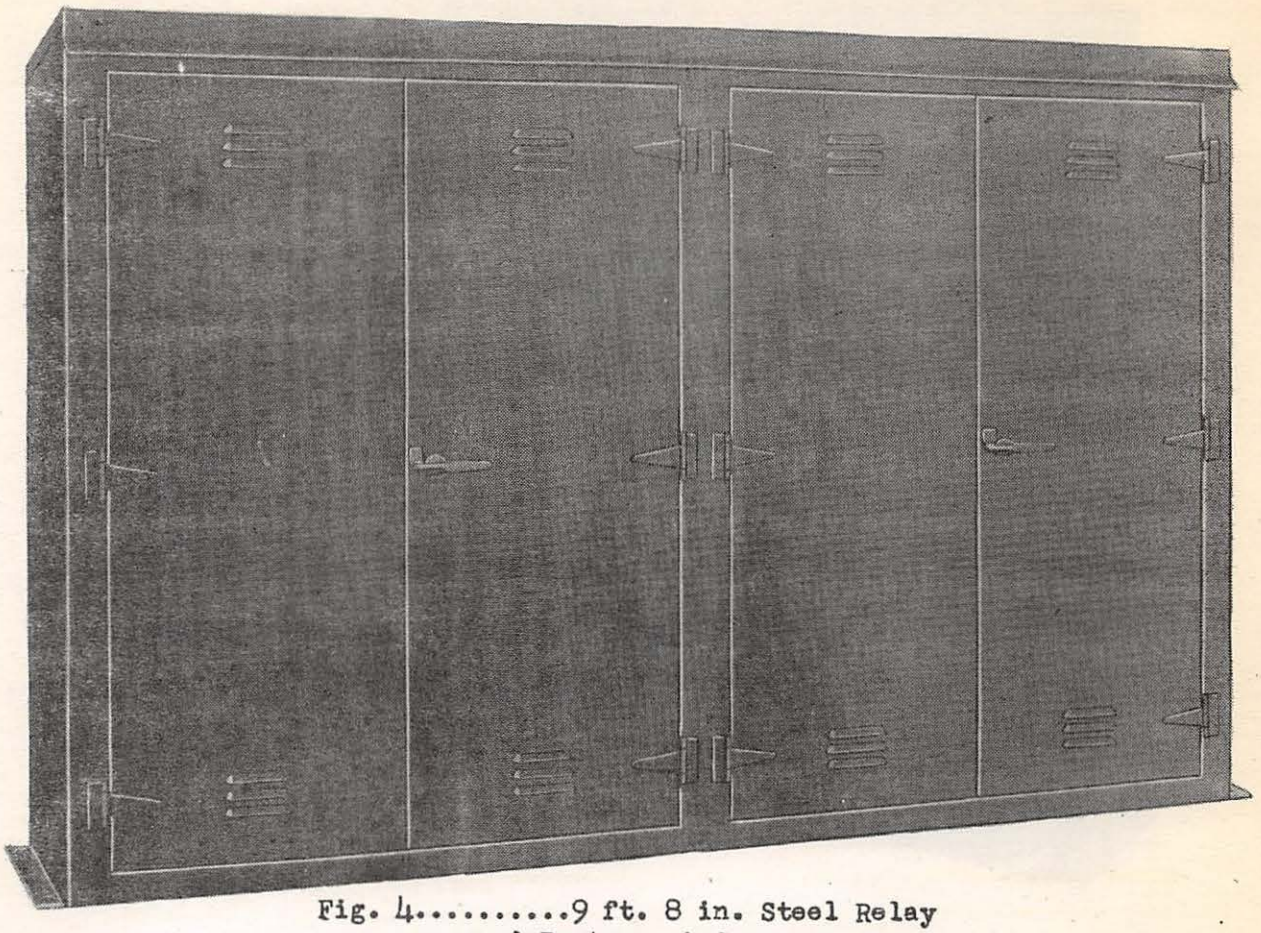

Fig. 4.....9 ft. 8 in. Steel Relay and Instrument Case.

Incoming wires are lead in through the foundation to the back compartment, the bottom of which is almost totally open.

Swinging doors on the front are provided with three points of locking contact. These doors, together with the removable panels in the rear are provided with a weatherproof packing well secured in position. Each door is provided with screened and hooded ventilators at both the top and bottom. The doors are of channel section and are reinforced so as to provide a rigid and durable structure. The rear panels, which need only be removed during the period of wiring or possibly at very infrequent intervals for inspection, are each held in place by two (2) dowels, over which the

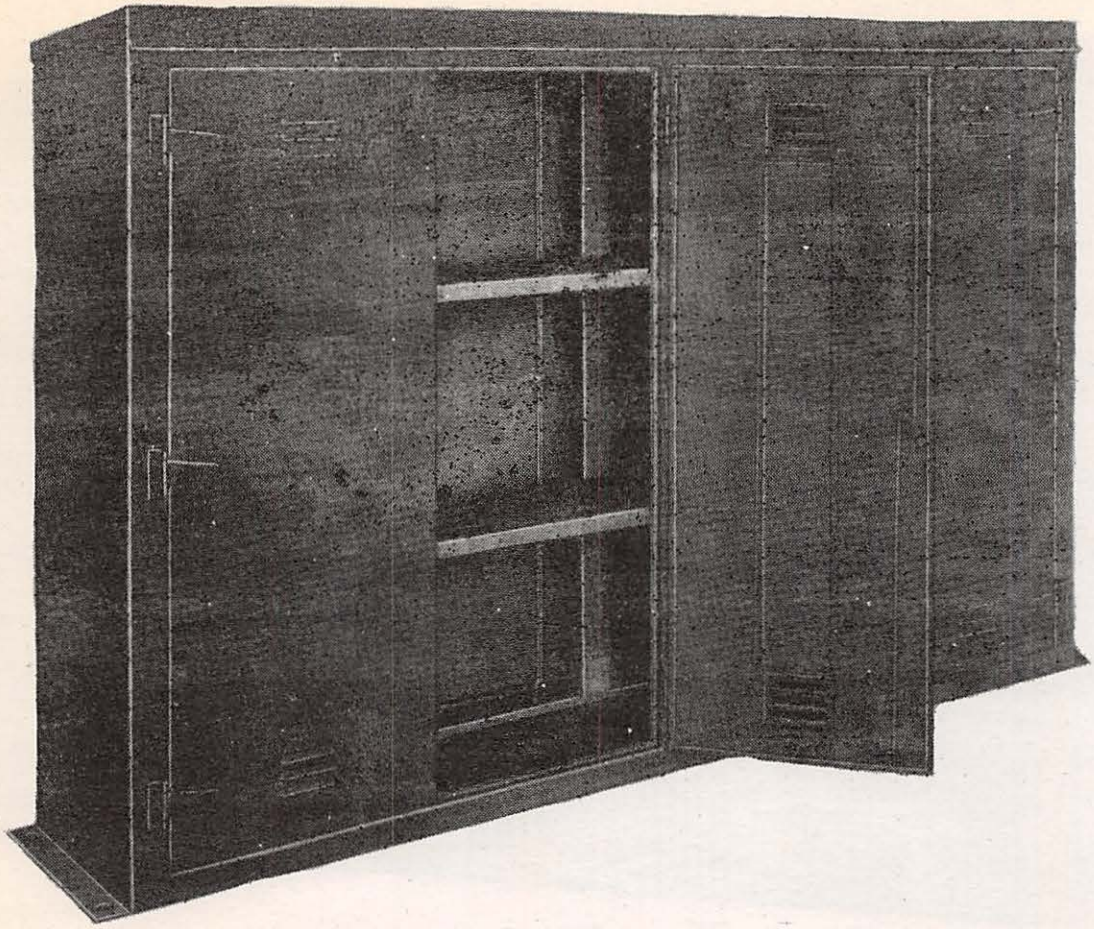

Fig. 5..... View of 9 ft. 8 in.
Steel Relay and Instrument Case.

lower end of the panel fits. In assembling the panel it is dropped over the dowels and swung into place. Two (2) tap bolts are provided at the top of the panel and two (2) midway between the top and the bottom, which screw into the back of the case and securely hold the panels in place. The tap bolts provided in these panels are so arranged that they can not become misplaced if the panel is removed.

It will be noted that all wires entering the case pass through to the locked compartment containing the terminal board so that all terminals or exposed wires are only accessible from the

a. W. Fischer file

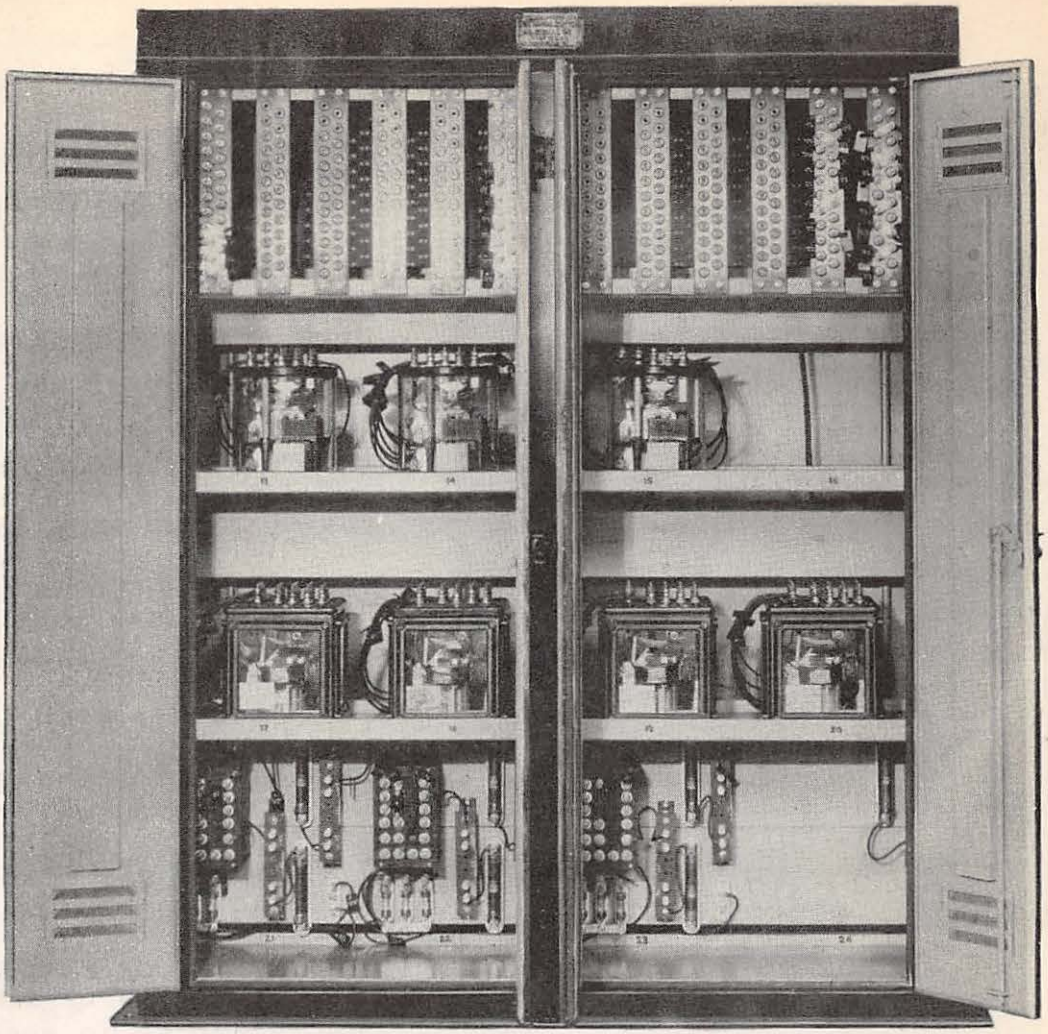

Fig. 6.....Front View of a "Shop Wired" Steel Relay Case which is similar to that shown in Fig.3, except that four narrow doors are used instead of two wide doors and the two lower shelves are spaced 18" apart instead of 23". Less clearance is thus necessary for swinging doors and terminal board space is provided in the top compartment.

front doors, which are provided for application of padlocks.

The cases weigh approximately 650, 800, and 1000 pounds respectively, and due to their rigidity can be readily handled by construction forces even when equipped with a full complement of relays etc.

There is a growing tendency to conform with the practice of using metal construction wherever possible. The desired grade of wooden relay cases requires the use of good clear seasoned lumber, which is now difficult to procure.

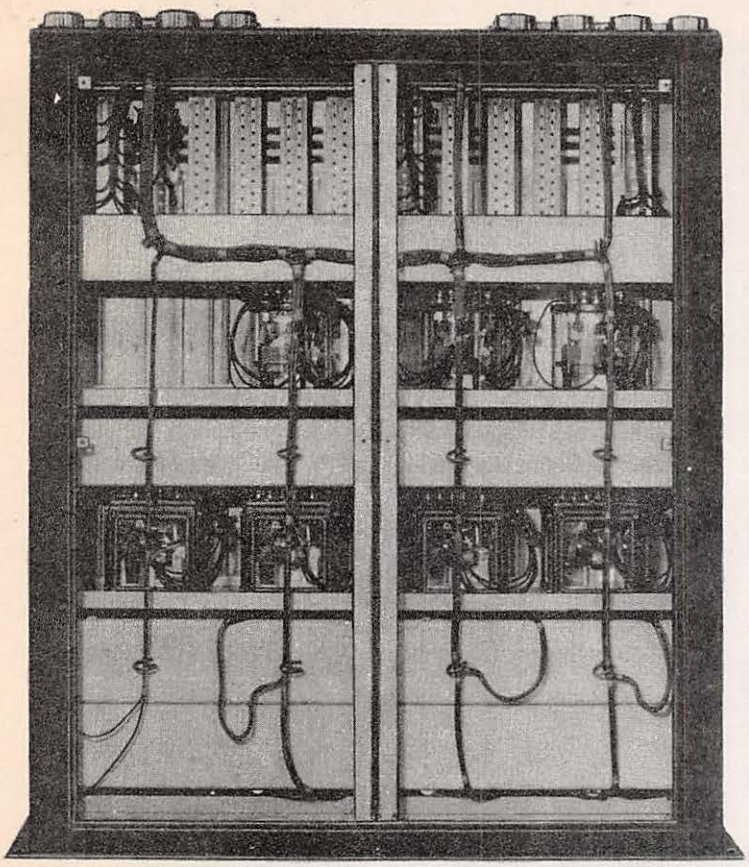

Fig. 7.....Rear of Case shown in Fig. 6 (doors removed). The roof may be equipped with conduit type wire outlets as shown.

Steel relay cases reduce fire hazards, especially from an outside origin. Observation, after over ten years of service, of sheet steel relay cases which were not constructed as substantially as this new type, indicates that their life is much longer than tin covered wooden cases serving the same application.....These cases are made as nearly rust proof as is consistent with available materials and processes. One coat of red lead and two coats of a good grade black paint are applied on all outside surfaces, the inside is painted aluminum over one coat of red lead.

Considerable time and labor may be saved by having instrument cases, as shown in Figs. 6 and 7, equipped with necessary relays, etc., and wired complete in our shops. This phase of the work is described in S.I.S. #168.

H. H. Cadwallader
3/16/32